Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

Big Bend Conservation Area

2017 Annual Report

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

October 2018

Work conducted under LCR MSCP Work Task E25

Lower Colorado River Multi-Species Conservation Program Steering Committee Members

Federal Participant Group

Bureau of Reclamation
U.S. Fish and Wildlife Service
National Park Service
Bureau of Land Management
Bureau of Indian Affairs
Western Area Power Administration

Arizona Participant Group

Arizona Department of Water Resources
Arizona Electric Power Cooperative, Inc.
Arizona Game and Fish Department
Arizona Power Authority
Central Arizona Water Conservation District
Cibola Valley Irrigation and Drainage District
City of Bullhead City
City of Lake Havasu City
City of Mesa
City of Somerton
City of Yuma
Electrical District No. 3, Pinal County, Arizona
Golden Shores Water Conservation District
Mohave County Water Authority
Mohave Valley Irrigation and Drainage District
Mohave Water Conservation District
North Gila Valley Irrigation and Drainage District
Town of Fredonia
Town of Thatcher
Town of Wickenburg
Salt River Project Agricultural Improvement and Power District
Unit "B" Irrigation and Drainage District
Wellton-Mohawk Irrigation and Drainage District
Yuma County Water Users' Association
Yuma Irrigation District
Yuma Mesa Irrigation and Drainage District

Other Interested Parties Participant Group

QuadState Local Governments Authority
Desert Wildlife Unlimited

California Participant Group

California Department of Fish and Wildlife
City of Needles
Coachella Valley Water District
Colorado River Board of California
Bard Water District
Imperial Irrigation District
Los Angeles Department of Water and Power
Palo Verde Irrigation District
San Diego County Water Authority
Southern California Edison Company
Southern California Public Power Authority
The Metropolitan Water District of Southern California

Nevada Participant Group

Colorado River Commission of Nevada
Nevada Department of Wildlife
Southern Nevada Water Authority
Colorado River Commission Power Users
Basic Water Company

Native American Participant Group

Hualapai Tribe
Colorado River Indian Tribes
Chemehuevi Indian Tribe

Conservation Participant Group

Ducks Unlimited
Lower Colorado River RC&D Area, Inc.
The Nature Conservancy

Lower Colorado River
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Multi-Species Conservation Program
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ACRONYMS AND ABBREVIATIONS

BBCA	Big Bend Conservation Area
FY	fiscal year
LCR MSCP	Lower Colorado River Multi-Species Conservation Program
lidar	light detection and ranging
pH	the acidity or basicity (alkalinity) of an aqueous solution
PIT	passive integrated transponder
Reclamation	Bureau of Reclamation
SNWA	Southern Nevada Water Authority

Symbols

°C	degrees Celsius
µS/cm	microsiemens per centimeter
mg/L	milligram(s) per liter

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Tables

Figures

1.0 INTRODUCTION

The purpose of this annual report is to summarize all activities that have occurred at the Big Bend Conservation Area (BBCA) from October 1, 2016, through September 30, 2017, which is Federal fiscal year (FY) 2017. Water usage is presented for the calendar year, January 1 through December 31, 2017, consistent with the Colorado River Accounting and Water Use Report: Arizona, California, and Nevada, Calendar Year 2017 (Bureau of Reclamation [Reclamation] 2018).

1.1 Background

Reclamation, the State of Nevada, and the Southern Nevada Water Authority (SNWA) worked in partnership since 2005 to secure the Boy Scout Camp property and protect the adjacent backwater for inclusion into the Lower Colorado River Multi-Species Conservation Program (LCR MSCP). The Boy Scout Camp property purchased by the SNWA (15 acres of upland honey mesquite [*Prosopis glandulosa*] habitat) and the adjacent 15 acres of backwater within Reach 3 owned by the State of Nevada are collectively known as the BBCA.

The LCR MSCP has a conservation measure requiring the creation of 85 acres of flannelmouth sucker (*Catostomus latipinnis*) habitat within Reach 3 (Davis Dam to Parker Dam). In addition, the program also requires the creation of 360 acres of backwater for both razorback suckers (*Xyrauchen texanus*) and bonytail (*Gila elegans*).

Flannelmouth suckers were reintroduced into the Colorado River below Davis Dam by the Arizona Game and Fish Department in 1976 by transfer of fish captured at the confluence of the Colorado and Paria Rivers at Lee's Ferry, Arizona. This stock has persisted for three decades and now represents the only known population of this native species in the Colorado River downstream from the Grand Canyon.

2.0 CONSERVATION AREA SITE INFORMATION

2.1 Purpose

Backwater habitat maintained within the BBCA will be managed for flannelmouth suckers, razorback suckers, and bonytail. The adjacent marsh habitat will be maintained for western least bitterns *(Ixobrychus exilis hesperis)* and Yuma clapper rails (*Rallus longirostris yumanensis* [also known as Ridgway's rail = *R. obsoletus yumanensis*]). The upland honey mesquite habitat will be maintained to provide foraging habitat for additional LCR MSCP covered species and to provide a venue for low-impact recreation.

2.2 Location

The BBCA is located in Nevada in Reach 3, in Laughlin, Nevada. It is within the historic flood plain of the lower Colorado River at River Mile 266 (figure 1).

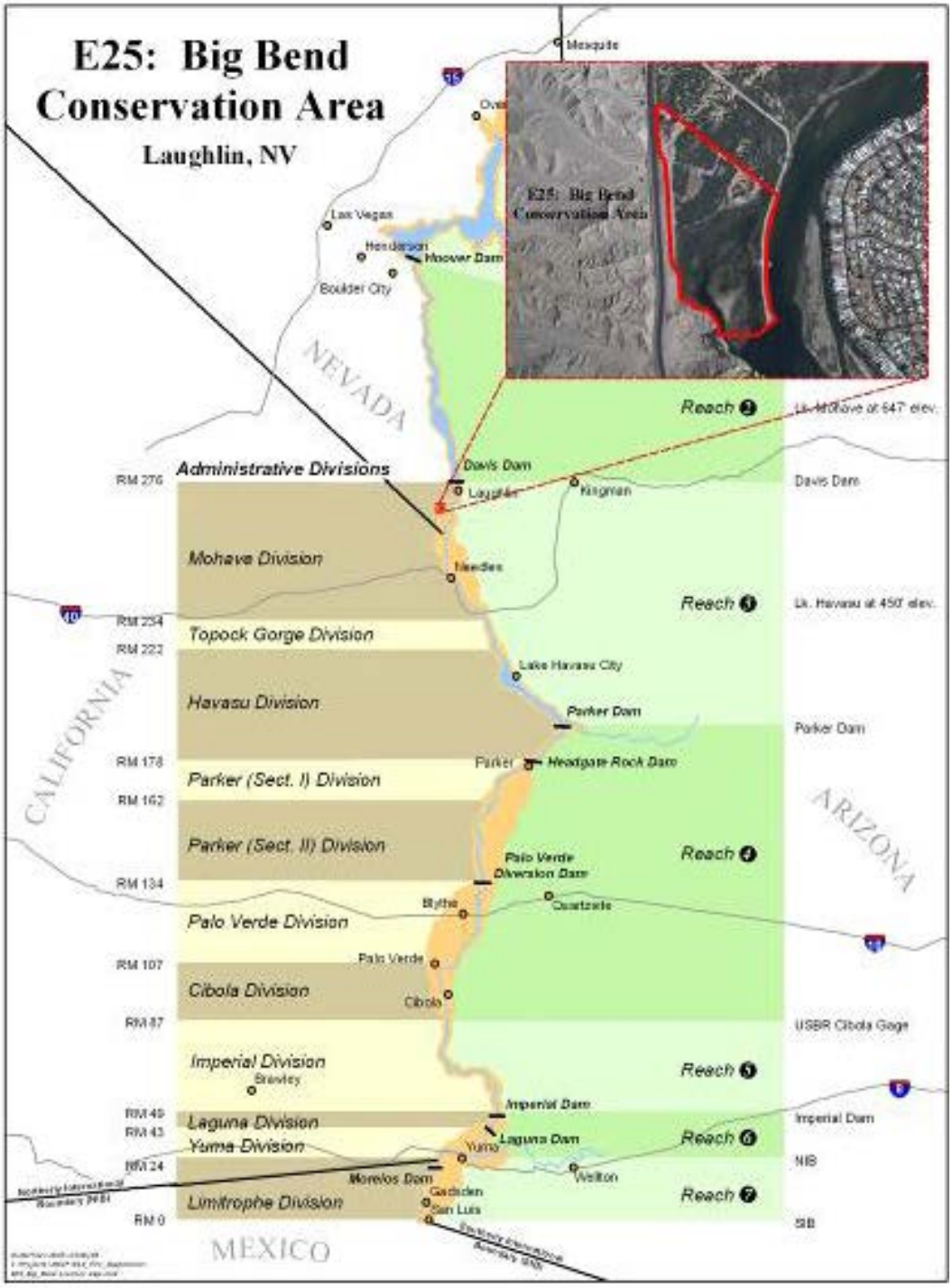

Figure 1.—LCR MSCP planning area with the BBCA (inset).

2.3 Landownership

The 15 acres of backwater habitat is owned by the State of Nevada, and the 15 acres of upland honey mesquite is owned by the SNWA.

2.4 Water

The SNWA has an entitlement to Colorado River water for use on 15 acres of honey mesquite upland for up to 10 acre-feet per year. However, the site no longer has the water entitlement because the restored mesquite plantings have been established and are utilizing groundwater.

2.5 Agreements

A Land Use Agreement was signed in 2008 by Reclamation, the SNWA, and the State of Nevada to secure land and water for the BBCA for the remainder of the 50-year LCR MSCP. The agreement outlines the rights and responsibilities of each partner in the project's development and maintenance.

2.6 Public Use

The upland area consists of a low-impact recreational hiking trail and a wildlife viewing area. Interpretive signage is located at the gravel parking lot for visitors. Although the LCR MSCP does not have substantial involvement in the interpretive area, cooperation is necessary to ensure all activities conducted in the upland area are consistent with the program's goals and objectives.

The backwater area has been designated a no-wake zone. Coordination between the Nevada Department of Wildlife and the Nevada Wildlife Commission resulted in the installation of two buoys at the entrance to the backwater to designate the wakeless area. Installation of the buoys occurred after the Wildlife Commission in 2010 approved the BBCA backwater as a no-wake zone (Colorado River Regulation 382, Legislative Council Bureau File No. R004-10). The buoys restrict access to the backwater to only wakeless speed in order to decrease disturbance to the wildlife.

2.7 Law Enforcement

The SNWA is responsible for law enforcement at the BBCA. A LCR MSCP Conservation Area Specific Fire Management & Law Enforcement Strategy was

finalized for the BBCA (LCR MSCP 2010). Reclamation continues to work with the SNWA and local officials to ensure law enforcement activities do not conflict with the LCR MSCP Habitat Conservation Plan.

2.8 Wildfire Management

Federal, State, and local fire agencies, either by existing management agreements or mutual aid agreements, provide wildland fire suppression, incident dispatch, fire investigation, fuels reduction, and potential fire restrictions. The full range of suppression strategies are available to managers provided that selected options do not compromise firefighter or public safety, are cost effective, consider the benefits of suppression and the values to be protected, and are consistent with resource objectives (LCR MSCP 2010).

3.0 HABITAT DEVELOPMENT AND MANAGEMENT

Figure 2 shows the established land cover types that are being managed for LCR MSCP covered species.

3.1 Planting

There were no new plantings at the BBCA during FY17. The backwater is maintained by the daily rise and fall of the Colorado River's operation.

3.2 Irrigation

No irrigation was conducted at the BBCA during FY17, as all the honey mesquite plantings have been established and utilize groundwater.

3.3 Site Maintenance

No maintenance activities for the upland mesquite area were conducted at the BBCA during FY17. Future maintenance activities may consist of invasive vegetation removal and road repair.

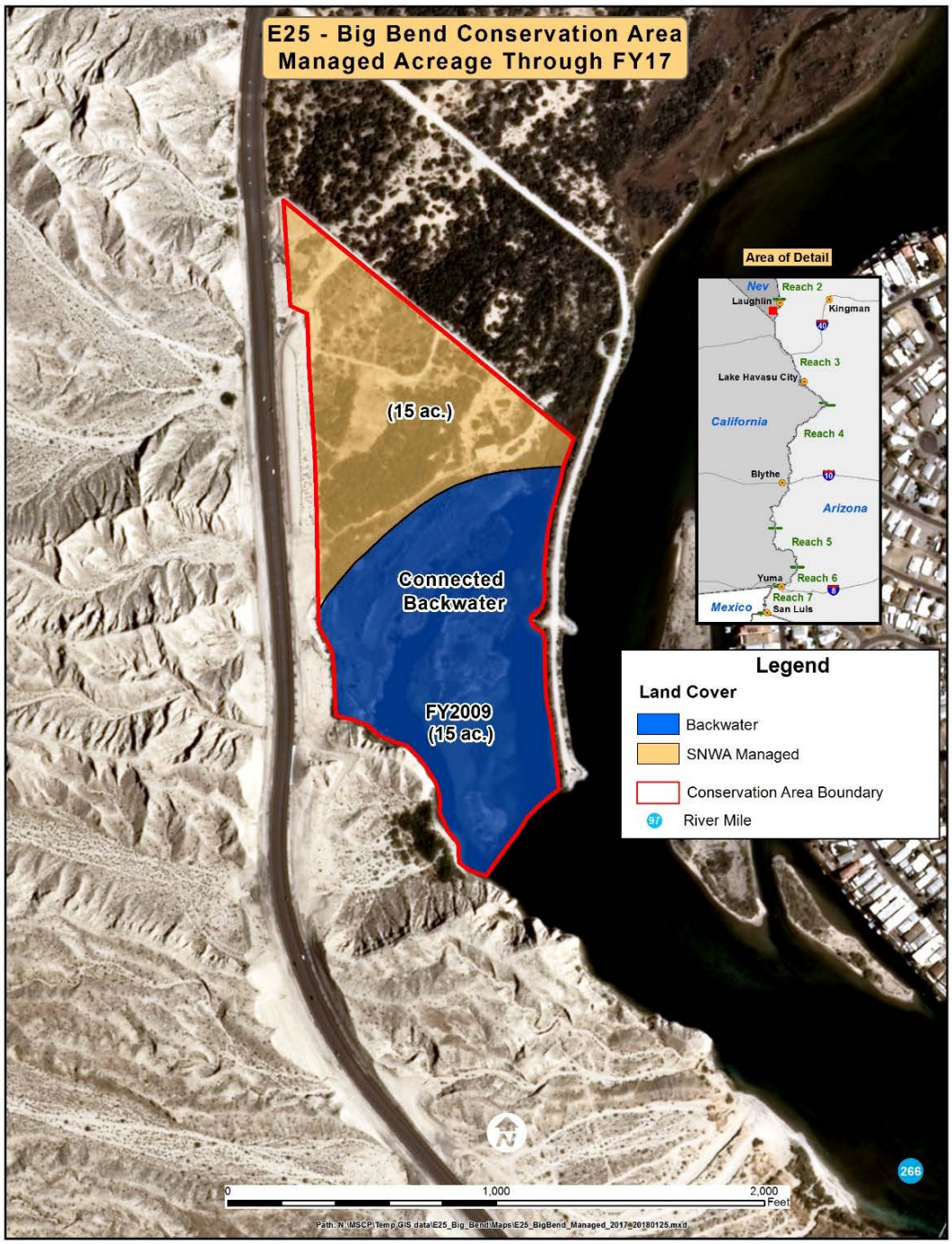

Figure 2.—BBCA managed acreage through FY17.

An annual backwater light detection and ranging (lidar) survey was conducted to monitor sedimentation and water depths within the BBCA. These data are being collected to compare elevations for LCR MSCP management to determine future maintenance needs for the backwater.

4.0 Monitoring

4.1 Backwater Monitoring

Routine fisheries monitoring of the BBCA was conducted monthly throughout FY17. Multiple sampling methods and gear types were used to contact various life stages of native fish species. Active monitoring was conducted using trammel nets and manual larval sampling, and passive monitoring was completed using remote passive integrated transponder (PIT) scanning. Monitoring efforts targeted areas where native fishes had been previously contacted; however, sampling locations were occasionally shifted to areas where daily fluctuations in river stage permitted access. Water quality was also recorded during each active monitoring trip.

4.1.1 Native Fishes

Trammel netting and remote PIT scanning were used to monitor adult native fish use of the BBCA in FY17. Trammel netting efforts were completed in the winter and spring months, and remote PIT scanning was conducted continuously. Six razorback suckers and 12 bonytail and were captured or contacted during the year. Four of the six razorback suckers were also recently stocked fish that had been released in Laughlin Lagoon in February and March 2017. The remaining two razorback suckers were released in Laughlin Lagoon and the Big Bend State Park in 2012 and 2013, respectively. Eleven of the bonytail were from a single stocking event in Laughlin Lagoon in April 2017. The remaining bonytail was released in Laughlin Lagoon in May 2017.

Larval sampling was timed to coincide with the razorback sucker and flannelmouth sucker spawning periods: February – March and April – May, respectively. Fifteen native fish larvae were captured during monitoring events. The capture rates were slightly higher than those in FY16 but similar to those prior to FY15.

4.1.2 Water Quality

Water quality was recorded at a single location in the backwater during each active fish monitoring trip. A multi-parameter probe was used to record water temperature in degrees Celsius (°C), dissolved oxygen in milligrams per liter

(mg/L), specific conductivity in microsiemens per centimeter (µS/cm), and pH. Due to its hydrological connection to the river, this backwater maintained excellent water quality throughout the year. Water temperature, dissolved oxygen, specific conductivity, and pH all remained within the known thresholds for native fishes throughout FY17. Water quality data are presented on figures 3–6.

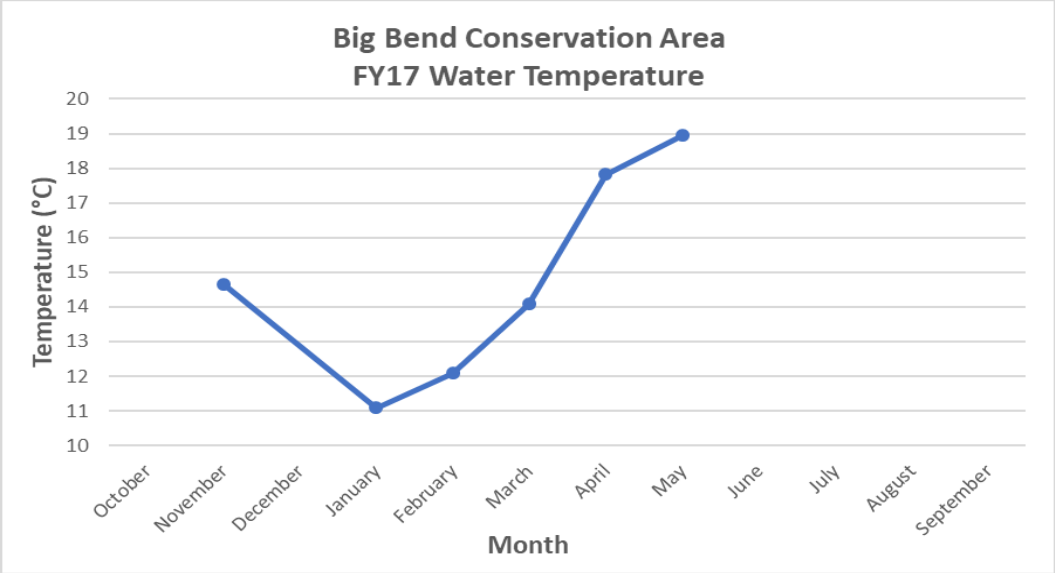

Figure 3.—BBCA water temperature, FY17.

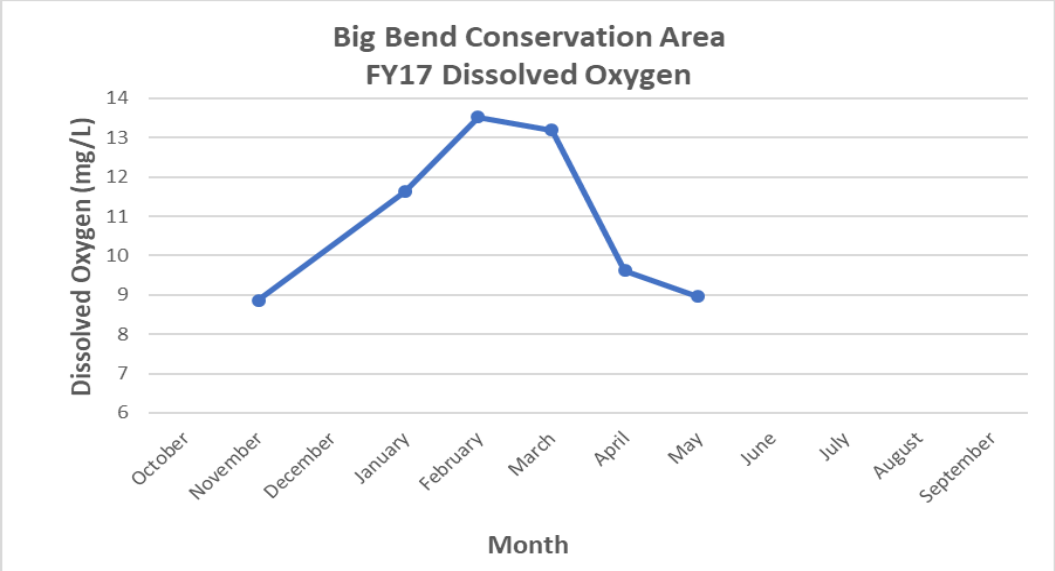

Figure 4.—BBCA dissolved oxygen, FY17.

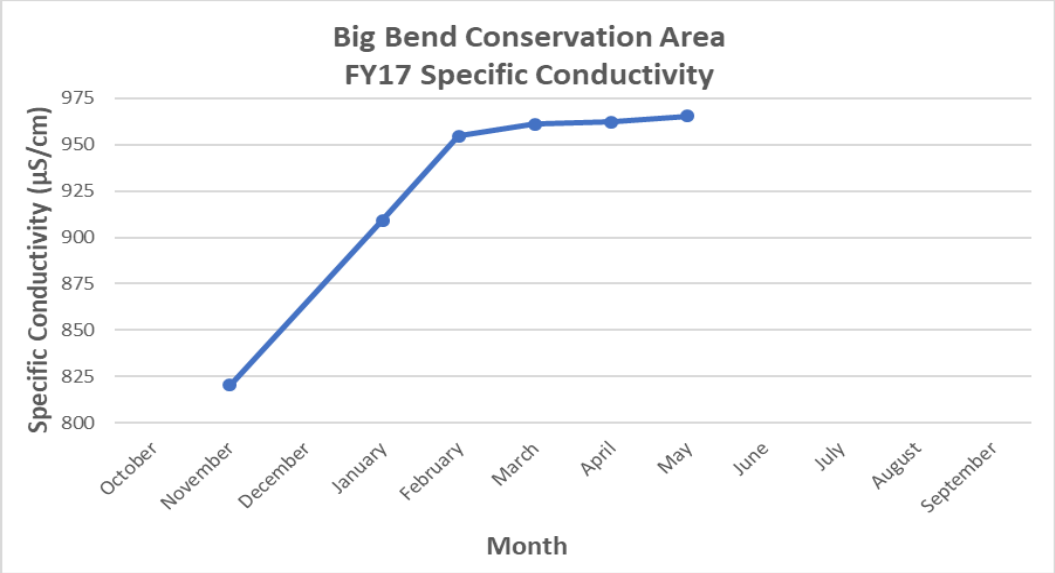

Figure 5.—BBCA specific conductivity, FY17.

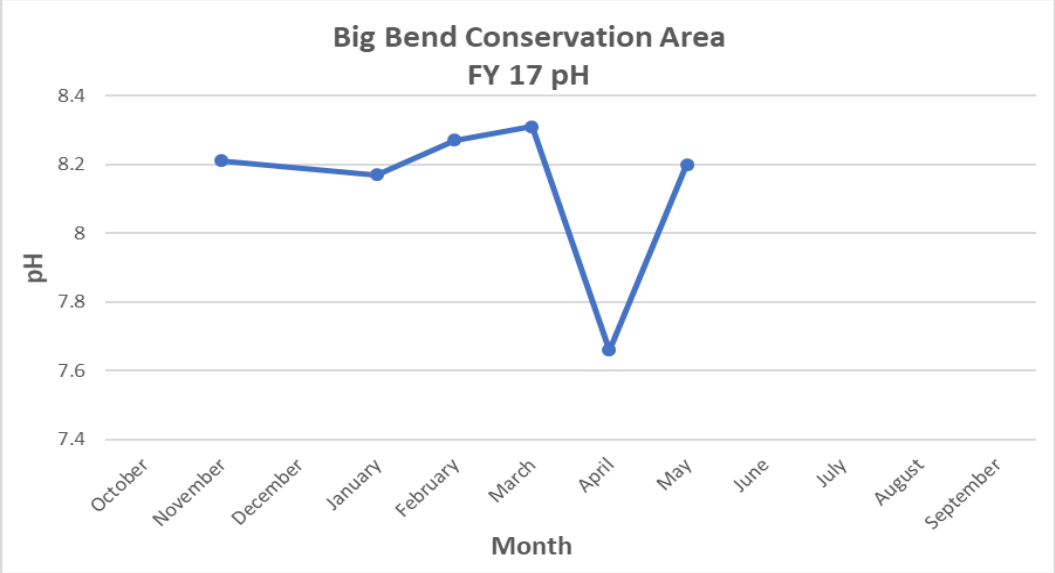

Figure 6.—BBCA pH, FY17.

4.2 Avian Monitoring

Avian monitoring at the BBCA in FY17 included surveys for marsh birds.

4.2.1 Marsh Bird Surveys

Presence surveys for California black rails (*Laterallus jamaicensis coturniculus*), western least bitterns, Virginia rails (*Rallus limicola*), and Yuma clapper rails were conducted in marsh habitat at the BBCA in three survey sessions during March and April. There were no LCR MSCP covered species detected during the three surveys (Ronning and Kahl, Jr. 2017).

4.3 Small Mammal Monitoring

Rodent monitoring was conducted at the BBCA in FY17.

4.3.1 Rodent Monitoring

Live trapping was conducted in the fall and spring of FY17 to determine the presence of Colorado River cotton rats (*Sigmodon arizonae plenus*) and desert pocket mice (*Chaetodipus pencillatus*). In fall, 80 traps were set on transects at the BBCA for 1 night; in spring, 40 traps were set on transects at the BBCA for 1 night. One Colorado River cotton rat was captured in spring. Seventeen desert pocket mice were captured in fall and one in spring; it is likely they were of the *sobrinus* subspecies based on range (Hill 2017b).

4.4 MacNeill's Sootywing Skipper Monitoring

Surveys for MacNeill's sootywing skippers (*Pholisora gracielae = Hesperopsis gracielae* [MacNeill]) were conducted in April and May 2017. There were no MacNeill's sootywing skippers documented at the BBCA (Hill 2017a).

5.0 HABITAT CREATION CONSERVATION MEASURE ACCOMPLISHMENT

5.1 Vegetation Monitoring

Vegetation data were collected in FY15 using lidar. Lidar measures the vegetation structure and provides the ability to identify structural diversity and successional growth stages. BBCA vegetation will be evaluated on a periodic

basis using lidar to ensure the habitat is meeting species' requirements. A procedure to analyze and provide vegetation structure metrics will be developed, and the results will be presented in future reports.

Preliminary analyses suggest that airborne lidar may not provide the necessary detail for evaluating marsh habitat. Alternative techniques will be explored.

The Final Habitat Creation Conservation Measure Accomplishment Tracking Process was finalized in October 2011 (LCR MSCP 2011). All areas within the BBCA were designed to benefit covered species at the landscape level. The BBCA was brought into the LCR MSCP to benefit flannelmouth suckers (FLSU1), razorback suckers (RASU2), and bonytail (BONY2), including other covered species.

Table 1.—Species-specific habitat creation conservation measure creditable total acres for 2017

Species-specific habitat creation conservation measure	FLSU1	RASU2	BONY2
Creditable acres in 2017	0	0	0
Total, including previous years	15	15	15

6.0 ADAPTIVE MANAGEMENT RECOMMENDATIONS

Adaptive management relies on the initial receipt of new information, the analysis of that information, and the incorporation of the new information into the design and/or direction of future project work (LCR MSCP 2007). The Adaptive Management Program's role is to ensure habitat creation sites are biologically effective and fulfill the conservation measures outlined in the Habitat Conservation Plan for 26 covered species and if they potentially benefit 5 evaluation species. Post-development monitoring and species research results will be used to adaptively manage habitat creation sites after initial implementation. Once monitoring data are collected over a few years, and then analyzed for the BBCA, recommendations may be made through the adaptive management process for site improvements in the future.

There are no adaptive management recommendations for the BBCA at this time.

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